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ABSTRACT

As part of its faculty development efforts, Brevard Community College (BCC) offers a 4- to 6-week Return To Industry (RTI) summer program for faculty interested in updating and expanding their skills and knowledge base in order to remain current with changing technology. The RTI program has the following characteristics: (1) it is open to faculty in all disciplines; (2) it is offered in the summer during non-contract time; (3) interested faculty propose their own objectives, suggest industry sites, and identify the experience's benefits to their program; (4) faculty receive a modest stipend; and (5) faculty can use the program as credit towards the graduate coursework hours required as part of the teaching contract at BCC. During the 9 years of RTI's existence, 54 BCC faculty members have received training, and over 40 business firms and government agencies have participated. In addition to benefiting from the upgrading of skills and technical knowledge in their field, teachers participating in the program report a renewed enthusiasm for teaching and an ability to integrate their on-site experiences into classroom lectures. Participating businesses and agencies welcome having an additional skilled "employee" at no cost to the company, and appreciate the benefits of having a relationship with the teachers who instruct the future employee pool, and who can refer the best graduates to the company. A report reviewing the summer 1990 RTI program is provided, including open-ended responses from follow-up surveys of participating faculty and industry representatives. (PAA)

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BREVARD COMMUNITY COLLEGE
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The Cutting Edge

SHARPENING FACULTY SKILLS IN A CHANGING WORLD

presented by

ROSEMARY G. LAYNE
and
GLENN FORESTER

JC910388

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MAY 19 - 22, 1991 ☐ AUSTIN, TEXAS

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THE CUTTING EDGE: SHARPENING FACULTY SKILLS IN A CHANGING WORLD

May 21, 1991

Presenters

Dr. Rosemary G. Layne
Dean of Special Programs
Brevard Community College

Glenn Forester, Instructor
Math/Science/Technology Division
Brevard Community College

AGENDA

1. Overview of BCC Faculty Return to Industry Program - Rosemary Layne
   - o Faculty Participation
   - o Industry Partners

2. "The Cutting Edge" - Video
   - o Video overview of Summer 1990 Program

3. Examples of Mutual Benefits - Glenn Forester
   - o Benefits to Faculty Professional Development
   - o Benefits to Industry
   - o Benefits to Programs/College
   - o Benefits to Students

4. Future Directions for the Program - Participants
   - o Questions/Answers
   - o Participant Experiences

THE CUTTING EDGE: SHARPENING FACULTY SKILLS IN A CHANGING WORLD

GOOD AFTERNOON. THANK YOU FOR SELECTING OUR PRESENTATION THIS AFTERNOON. THE TITLE OF OUR PRESENTATION IS "THE CUTTING EDGE: SHARPENING FACULTY SKILLS IN A CHANGING WORLD." I'M ROSEMARY LAYNE, DEAN OF SPECIAL PROGRAMS AT BREVARD COMMUNITY COLLEGE IN FLORIDA, WHERE I COORDINATE STAFF AND PROGRAM DEVELOPMENT. PRESENTING WITH ME TODAY IS GLENN FORESTER, INSTRUCTOR IN THE MATH/SCIENCE/ TECHNOLOGIES DIVISION. DURING HIS 8 YEARS AS INSTRUCTOR OF AUTOMOTIVE TECHNOLOGY, GLENN HAS KEPT ON THE CUTTING EDGE OF HIS DISCIPLINE. HE PARTICIPATED IN THE BCC RETURN TO INDUSTRY PROGRAM IN SUMMER 1988 AND 1990.

GLENN HAS A STORY TO SHARE WITH YOU ABOUT WHY WE'RE HERE. (SHIFT TO GLENN)

"LET ME TELL YOU A STORY ABOUT 2 COLLEAGUES OF MINE. THEY WERE AVID OUTDOORSMEN AND FOR YEARS HAD BEEN WANTING TO GO TO YELLOWSTONE PARK ON A CAMPING TRIP. FOR YEARS THEY SAVED TO GO ON THIS TRIP. FINALLY, WHEN THE DAY ARRIVED WHEN THEY WERE TO MAKE IT, THE PARK RANGER STOPPED THEM AT THE GATE AND INFORMED THEM THAT HE DID NOT RECOMMEND THEY CAMP OUT AT THIS TIME. THE RANGER SAID THE GRIZZLY BEARS WERE ABOUT AND IT WAS DANGEROUS. TWO MEN EXPLAINED THAT THEY HAD WAITED FOR YEARS TO GO ON THIS TRIP, SO THE RANGER ALLOWED THEM TO ENTER WITH A WORD OF CAUTION. HE TOLD THEM THAT IF THEY SHOULD COME UPON A GRIZZLY THAT WHATEVER THEY DID THEY SHOULD NOT RUN BECAUSE THEY SIMPLY COULD NOT OUTRUN THE BEAR. THE 2 MEN THANKED HIM AND ENTERED THE PARK WHEREUPON THEY SET UP CAMP. THE NEXT MORNING THEY AWOKE TO A DISTURBANCE AT THE CAMPSITE. ONE OF THE MEN STUCK HIS HEAD OUT OF THE TENT AND JUST AS QUICKLY PULLED IT BACK IN. HE TURNED TO HIS FRIEND AND EXCLAIMED 'THERE IS A GRIZZLY OUT THERE!' AT THAT POINT HIS COMPANION REACHED DOWN, PULLED ON HIS NIKES AND BEGAN LACING THEM. HIS COMPANION ASKED, 'WHAT ARE YOU DOING, YOU CAN'T OUTRUN THAT GRIZZLY!' AT WHICH HIS COMPANION REPLIED, 'WELL, THE WAY I HAVE IT FIGURED, ALL I HAVE TO DO IS OUTRUN YOU.'"

THAT IS A MAN WITH A PLAN. NOW, IF YOU THINK OF THE BEAR AS BEING TECHNOLOGICAL CHANGE-- AS AN INSTITUTION WE CAN'T POSSIBLY OUTRUN THE BEAR. BUT WE TOO NEED A PLAN. OUR PLAN AT BREVARD COMMUNITY COLLEGE IS A RETURN TO INDUSTRY PROGRAM AIMED AT KEEPING FACULTY ON THE CUTTING EDGE OF THEIR DISCIPLINES. ROSEMARY, (SHIFT TO ROSEMARY)

IF YOU ARE SEEKING CREATIVE WAYS TO STAY ON THE CUTTING EDGE OF YOUR DISCIPLINE, OUR TOPIC TODAY SHOULD APPEAL TO YOU. IN THE 45 MINUTES WE HAVE TOGETHER TODAY, GLENN AND I WILL OVERVIEW A SUCCESSFUL PROGRAM WHICH HAS BEEN IN OPERATION AT OUR COLLEGE FOR THE PAST NINE YEARS.

BEFORE GETTING STARTED, THOUGH, IT WOULD BE HELPFUL IF WE KNEW A LITTLE ABOUT YOU. HOW MANY OF YOU ARE INSTRUCTIONAL FACULTY?...HOW MANY OF YOU ARE IN VOCATIONAL/TECHNICAL AREAS?...HOW MANY IN MATH/SCIENCE...HOW MANY IN LIBERAL ARTS?...OTHER AREAS...HOW MANY ADMINISTRATORS....

THANK YOU. IF POSSIBLE, WE WILL TRY TO PROVIDE EXAMPLES THAT YOU WILL FIND HELPFUL IN YOUR GENERAL DISCIPLINE AREA.

NOW I'D LIKE TO ASK SOME OF THE WAYS IN WHICH YOU HAVE TRIED TO KEEP UP TO DATE IN YOUR FIELD. READING JOURNAL ARTICLES....ATTENDING CONFERENCES....INTENSIVE TRAINING SEMINARS...RETURN TO INDUSTRY....ETC.

AGAIN, THANK YOU...I SEE WE HAVE SOME REALLY UP-TO-DATE FOLKS IN THIS GROUP. ALL OF US SEEM TO BE RUNNING TO KEEP AHEAD OF THE BEAR....SO TODAY WE'VE DEVISED A WAY FOR YOU TO RELAX A LITTLE IN THIS SESSION. LET ME EXPLAIN.

EACH OF YOU HAS BEEN GIVEN A BOOKLET. (HOLD BOOKLET UP) YOU MAY HAVE NOTICED THAT THE BOOKLET IS ACTUALLY TWO BOOKLETS IN ONE. THE FIRST ONE, "THE CUTTING EDGE" IS DESIGNED ESPECIALLY FOR YOUR USE TODAY. THE SECOND ONE IS A REPORT ON OUR SUMMER 1990 FACULTY RETURN TO INDUSTRY PROGRAM. IT HAS ALL THE DETAILS ABOUT THE PROGRAM'S GOALS/OBJECTIVES, FACULTY PARTICIPATION, THE RESULTS OF OUR FEEDBACK FORMS TO FACULTY AND INDUSTRY, AND RECOMMENDATIONS. IT'S FOR YOUR USE AFTER YOU LEAVE HERE TODAY. IT TAKES THE PLACE OF YOU HAVING TO TAKE A LOT OF NOTES TODAY.

BUT FOR NOW, WE'D LIKE YOU TO RELAX AND PARTICIPATE IN OUR PROGRAM ACCORDING TO THE AGENDA ON PAGE 1 OF "THE CUTTING EDGE". FIRST, I WILL PROVIDE AN OVERVIEW OF OUR PROGRAM, THEN YOU WILL HEAR FACULTY AND INDUSTRY COMMENTS ON OUR PROGRAM IN A 10-MINUTE VIDEO. NEXT, GLENN WILL PROVIDE EXAMPLES OF MUTUAL BENEFITS AND SHARE WITH YOU HIS EXPERIENCES IN THE PROGRAM. FINALLY, WE'VE SET ASIDE TIME FOR QUESTIONS AND TO HEAR ABOUT YOUR EXPERIENCE WITH SIMILAR PROGRAMS.

OUR PROGRAM IS ONLY ONE MODEL OF THE MANY VARIATIONS OF FACULTY RETURN TO INDUSTRY PROGRAMS. IT HAS WORKED SUCCESSFULLY FOR OUR COLLEGE FOR THE PAST NINE YEARS. HOWEVER, TO PUT OUR PROGRAM IN PERSPECTIVE, YOU PROBABLY NEED TO KNOW A LITTLE ABOUT OUR COLLEGE AND ITS COMMUNITY ENVIRONMENT. BCC IS LOCATED IN EAST CENTRAL FLORIDA ON THE NATION'S SPACE COAST NEAR THE KENNEDY SPACE CENTER . WE OFFER A.S. AND A.A. DEGREE AND ADULT VOCATIONAL CERTIFICATE PROGRAMS ALONG WITH ADULT BASIC EDUCATION, GED, AND ADULT HIGH SCHOOL PROGRAMS, AND SPECIAL TRAINING SEMINARS FOR INDUSTRY. WE HAVE CAMPUSES LOCATED IN COCOA, MELBOURNE, AND TITUSVILLE AND CENTERS AT PATRICK AIR FORCE BASE AND AT THE BCC FLORIDA ADVANCED TECHNOLOGY CENTER IN PALM BAY. IN 89-90 WE SERVED MORE THAN 50,000 STUDENTS --ONE OUT OF 8 BREVARD COUNTY RESIDENTS. THE FALL CREDIT FTE WAS 14,200.

THERE ARE SEVERAL KEY ELEMENTS IN OUR FACULTY RETURN TO INDUSTRY PROGRAM. THE PROGRAM WAS ORIGIANALLY ESTABLISHED TO ASSIST FACULTY IN UPDATING AND EXPANDING THEIR SKILLS AND KNOWLEDGE BASE IN ORDER TO REMAIN CURRENT WITH CHANGING TECHNOLOGY. OVER THE YEARS IT HAS BEEN MODIFIED SLIGHTLY AND NOW HAS THE FOLLOWING CHARACTERISTICS: 1) IT IS OPEN TO FACULTY IN ALL DISCIPLINE AREAS. ALTHOUGH IT STARTED OUT AS A PROGRAM FOR VOCATIONAL/TECHNICAL AREAS, OUR FACULTY SOON CONVINCED US THAT TECHNOLOGY AFFECTS ALL DISCIPLINE AREAS. 2) IT IS A 4-6 WEEK SUMMER PROGRAM OFFERED DURING NON-CONTRACT TIME. 3) INTERESTED FACULTY PROPOSE THEIR OWN OBJECTIVES, SUGGEST INDUSTRY SITES, AND INDICATE HOW THE EXPERIENCE WILL BENEFIT THEIR PROGRAM. 4) INCENTIVES TO FACULTY INCLUDE A MODEST STIPEND AND THE OPPORTUNITY TO USE THIS EXPERIENCE AS INSERVICE UNITS TO MAINTAIN THEIR CONTINUING CONTRACT AT THE COLLEGE. (OUR COLLEGE HAS A FACULTY DEVELOPMENT PROGRAM WHICH REQUIRES THAT EACH FACULTY MEMBER ON CONTINUING CONTRACT COMPLETE 6 SEMESTER HOURS OR THE EQUIVALENT OF GRADUATE COURSEWORK EVERY 6 YEARS. THE FACULTY RETURN TO INDUSTRY PROGRAM WOULD SERVE AS THE EQUIVALENT FOR 3 HOURS OF COURSEWORK).

WE HAVE BEEN DELIGHTED WITH THE FACULTY INVOLVEMENT IN THE PROGRAM. UP TO THIS POINT, 54 FACULTY HAVE PARTICIPATED IN THE PROGRAM. DISCIPLINE AREAS RANGE FROM VOCATIONAL/TECHNICAL AND ALLIED HEALTH AREAS SUCH AS PRECISION MACHINING, MEDICAL LAB TECHNOLOGY, AND COMPUTER INFORMATION SYSTEMS TO MATH/SCIENCE AREAS SUCH AS PHYSICS, MICROBIOLOGY, AND STATISTICS. IN ADDITION, LIBERAL ARTS AND

BEHAVIORAL SCIENCE FACULTY HAVE PARTICIPATED IN DISCIPLINE AREAS SUCH AS ENGLISH, PSYCHOLOGY, POLITICAL SCIENCE, AND PHYSICAL EDUCATION.

WE HAVE BEEN EQUALLY DELIGHTED WITH THE PARTICIPATION FROM INDUSTRY. IN THE PAST NINE YEARS, OVER 40 PUBLIC OR PRIVATE BUSINESS FIRMS OR GOVERNMENT AGENCIES HAVE BEEN INVOLVED. THESE RANGE FROM AEROSPACE AND OTHER HIGH-TECH INDUSTRIES SUCH AS MCDONNELL-DOUGLAS, ROCKWELL INTERNATIONAL AND GENERAL ELECTRIC TO PRIVATE FIRMS SUCH AS AUTOMOBILE DEALERSHIPS. ALL FOUR HOSPITALS IN BREVARD COUNTY HAVE BEEN INVOLVED ALONG WITH NATIONAL, STATE AND COUNTY AGENCIES SUCH AS THE U.S FISH AND WILDLIFE SERVICE, BREVARD CORRECTIONAL INSTITUTE, THE BREVARD COUNTY TOURIST DEVELOPMENT COUNCIL, AND THE BREVARD COUNTY PLANNING AND ZONING DEPARTMENT. THE LEISURE INDUSTRY HAS ALSO BEEN HEAVILY INVOLVED IN OUR PROGRAM AS EVIDENCED BY PARTICIPATION OF HOLIDAY INNS, WALT DISNEY WORLD, AND NUMEROUS GULF COURSES WITHIN OUR COUNTY. THIS SUMMER ONE OF OUR PHYSICAL EDUCATION FACULTY IS WORKING WITH A SMALL COMPANY IN ORLANDO WHICH IS CHARACTERISTIC OF A NEW TYPE OF SERVICE SURE TO EXPAND IN THE ERA OF AGING BABY BOOMERS. THE COMPANY, FIRM FITNESS, PROVIDES PERSONAL ONE-ON-ONE FITNESS TRAINING TO EXECUTIVES, HOTEL GUESTS, OR ANYONE ELSE WHO CAN AFFORD THE LUXURY OF HAVING A PERSONAL TRAINER COME TO THEIR HOME OR WORKSITE.

THE VIDEO WHICH WE HAVE WITH US TODAY ALLOWS YOU TO HEAR FIRSTHAND WHAT OUR FACULTY AND INDUSTRY PARTICIPANTS HAVE TO SAY ABOUT THE BENEFITS OF THE PROGRAM. YOU WILL SEE AND HEAR FROM 6 OF THE 10 FACULTY WHO PARTICIPATED IN OUR SUMMER 1990 PROGRAM. THESE ARE JENNIFER MEYER (TURFGRASS OPERATIONS), GLENN FORESTER (AUTOMOTIVE TECHNOLOGY), JOHN HEIMANN (HOSPITALITY MANAGEMENT), ERIC HARMS (PHYSICAL SCIENCE), CHRYS PANAYIOTOU ( ) AND SHAI NEUMANN (MATHEMATICS). YOU WILL ALSO HEAR FROM SELECT INDUSTRY SUPERVISORS FROM HARRIS CORPORATION, RON-NORRIS BUICK-HONDA-GMC, NATIONAL WEATHER SERVICE, AND DICTAPHONE CORPORATON.

(VIDEO - 10 MINUTES)

(GLENN'S PART)

BENEFITS FOR FACULTY PROFESSIONAL DEVELOPMENT

The video tape you just viewed explained some of the benefits of our Return to Industry program. Such things as; exposure to the latest equipment and technology found in industry; the chance to update faculty skills with the latest techniques and methods; and also the resultant increased level of confidence that goes along with these experiences. Now I would like to expand on a few of them and mention a few others that the tape did not cover.

As we are all aware, the world is changing very rapidly, and this impacts almost every discipline area. New types of specialized equipment and computers are being used in virtually every occupational area. Its obvious that the program will allow exposure to this aspect. But what about some of the not so obvious examples. Such things as being able to bring interesting case studies back to the classroom to enhance the lectures of the instructor.

For instance, in my recent experience working for a local Honda dealership I was called upon to solve a problem in a vehicle that had been worked on by two other technicians previously. They had both tried replacing several different components in an unsuccessful attempt to get the air conditioning compressor to operate. I found out that the vehicle in question had been in an accident and after the body repairs the AC would not operate. After about four hours of using the wiring schematic to trace out and test the circuitry to the compressor, I discovered that two of the wiring harness connectors that had the same type of coupler, but operated different components of the AC system had inadvertently been cross-connected by the body shop. After reconnecting the harness in the correct manner all was well.

A NARRATIVE BY GLENN E. FORESTER
PROGRAM COORDINATOR FOR AUTOMOTIVE TECHNOLOGY
AT BREVARD COMMUNITY COLLEGE

This is exactly the type of information that needs to be related to your students. It demonstrates the importance of having the skills to decipher a wiring schematic and lets them know that you never know what to expect in a "real world" situation. Had I not participated in the Return to Industry program, this example would not be a part of my lectures.

One other benefit that is not real obvious is the opportunity to participate in industry training sessions that the instructor might not otherwise be privy to. For example, when I was employed at the Chevrolet dealer we had weekly updates on the latest changes and new systems found on the 1989 models. These sessions involved the distribution of training manuals and viewing a video tape program.

So, if any of you are like myself, and I'm sure you are, when you learn something new and exciting you just can't wait to get back to the classroom and impart this knowledge to your students. This tends to revitalize your enthusiasm for teaching.

BENEFITS TO INDUSTRY

There is undoubtedly a benefit to industry by having an additional employee, this if nothing else is the "hook" that gets you in the door. But once again there are some not so obvious benefits for the employer as well.

For example, as you saw on the video tape one of my colleagues spent the summer working for Dictaphone Corporation, a very large and established firm that produces the automated 911 and phone switching systems so prevalent today. On his own initiative he assumed the responsibility of evaluating some of the sophisticated machine operations performed at their manufacturing facility. This was something that needed to be done, but the plant was too shorthanded to spare an engineer to do the study. His investigation resulted in the implementation of new procedures to aid in the reduction of down time for machines and less scrap left over after machine operations were complete. This has led to huge savings for the company that otherwise could not have been realized. I guarantee you that this company will be more than willing to participate in Return to Industry again.

One other major benefit to industry, especially if your relationship with them includes the placing of graduates from your programs into their entry level openings, is that you are more able to identify the skills that are lacking in their employees and give these skills to your students. That will reduce the time needed to make entry level employees productive members of the organization. By establishing this relationship with the college, industry will also be able to provide input into program and curriculum development. Last but not least, the full-time employees you may be associated with could also broaden their perspectives. Whenever you work with others there is always an exchange of ideas and techniques.

BENEFITS TO PROGRAM/COLLEGE

As I mentioned the ability to identify skills needed by entry level employees, let's expand on that idea. Once these skills have been identified the instructor may revise his curriculum to meet these needs, or develop new courses to address them. The selection of textbooks and long range plans and goals of programs, such as three year plans for purchase of capital equipment could be enhanced by Return to Industry. During my experiences with the program, I noticed deficiencies of technicians currently employed in industry. This has led to the planning stages to develop update training courses to be offered in the evening. These courses will tend to bring outdated employees "up to speed" with new technology.

Technical and vocational programs generally have a requirement to maintain an advisory council. Where would be a better place to find these industry participants than through contacts made in a Return to Industry program. These volunteer workers can be invaluable in acquiring donations of hardware, training aids, equipment and software relative to their industry.

This program will also allow the institution to promote the instructional staff as true professionals. All too often industry is of the opinion that teachers are "ivory tower book learners". More often than not, this is not the case and Return to Industry affords the college the opportunity to change this perception. Being able to do this will lend more credibility and confidence in the institution, program, and its graduates.

BENEFITS TO STUDENTS

Where would we be if not for our students? They are the reason we are here. Therefore all of this is just window dressing unless it can be related to the students experiences. In my opinion you do your students a disservice if you do not make some attempt to remain current. The students are the greatest benefactor in a program such as this. The students receive training from an instructor that has first hand experience with state-of-the-art technology, has identified those skills that are most important to potential employers, and has real world experiences to draw upon.

Additionally the instructor has insight into the academic skills needed to be a successful employee in his discipline. One cannot overlook the technological changes that have occurred and how it has impacted the need to have highly literate employees. These employees must not only be capable of reading and communicating at a level on par with the technology now found in the workplace, but must be literate enough to continue the learning process to meet the challenge of the 21st century. These are the things that may be identified through participation in Return to Industry.

You also cannot overlook the fact that the instructor has developed ties with industry that could allow CO-OP educational methods to be used. Not only do you develop linkages for a CO-OP program but you have an instructor that has identified potential sources for student placement after graduation as well.

MY EXPERIENCES

In some instances instructors may find their own employment in the summer without coordinating with a Return to Industry program. Many time past I have done just that. So, why did I elect this program? Being an automotive person is a little different than many other occupations. You are usually compensated on a commission basis. This in return requires that one must maximize the volume of work completed to insure a decent financial reward at week's end. This is not mutually compatible with trying to achieve a learning type experience while working. Having the knowledge that you will be paid for your efforts even if you aren't highly productive in respect to your volume of work allows you to concentrate on tasks you might otherwise elect not to attempt. This is where the true learning begins.

In my most recent experience I specifically requested tasks that were beyond the routine work performed. By doing this I was exposed to some of the more complicated and challenging problems found in the automotive field. This was a twofold benefit; first it allowed me to develop diagnostic skills on advanced fuel and emissions systems that I had previously only seen in manufacturer's training sessions, and secondly, to instill the knowledge that I was capable of servicing these type systems, which would translate into the ability to teach them more effectively.

Another interesting observation I had from my experiences was to identify operational differences between two businesses. In one of the dealerships in which I was employed, many times I would wait in line in the parts department for up to twenty minutes. At the other business, I rarely waited more than five minutes. When you have employees being paid on a commission, time becomes money, to have employees standing in line that long before they may begin work is needless waste.

These are the types of things I may return to teaching with, thus allowing me to better prepare my students for employment. And isn't that what it is all about?

TODAY YOU HAVE PARTICIPATED IN OUR MODEL FOR FACULTY RETURN TO INDUSTRY. ITS SUCCESS IS BASED ON FACULTY INVOLVEMENT. IT IS THE FACULTY WHO SET THE GOALS AND SELECT THEIR WORKSITES. IT IS THE FACULTY WHO HAVE BECOME ACTIVELY ENGAGED IN THE PROGRAM AND WHO HAVE SPREAD THE WORD AMONG THEIR COLLEAGUES--TOUCHING EVERY DEPARTMENT AT OUR COLLEGE. AND IT IS THE FACULTY WHO HAVE TRANSLATED THEIR RETURN TO INDUSTRY EXPERIENCES INTO UPDATED COURSES AND IMPROVED PROGRAMS FOR OUR STUDENTS.

The Cutting Edge

Brevard Community College, Florida

Key Aspects of the Program

- Open to All Faculty
- 4-6 Week Summer Program
- Faculty Proposed Objectives
- Incentives to Faculty

Faculty Participation

English
Psychology
Biology
Electronics
Computer Information Systems
Automotive Technology

Over 50 Faculty Participants!

Notes:

Industry Partners

Rockwell

Cape Canaveral Hospital

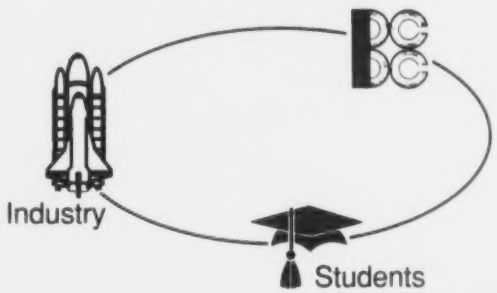
National Weather Service

Walt Disney World Co.

Florida TODAY

Over 40 Industry Partners!

Mutual Benefits



Benefits to Faculty

Increase

Build Skills

Notes:

Benefits to Industry/ Program/Students

Industry

- Reduce entry training
- Study special problem
- Broaden perspectives

Program

- Update courses/texts/equipment
- Establish advisory contacts
- Build employer confidence

Students

- State-of-art knowledge
- Job/co-op placements

The Cutting Edge

Questions & Answers

Notes:

For further information on the BCC Return to Industry Program, please contact:

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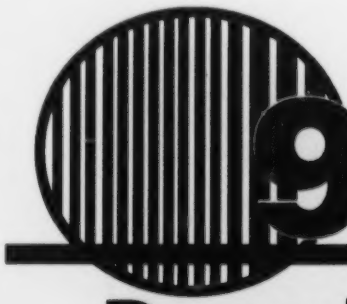

Decade of DISCOVERY

FACULTY RETURN TO INDUSTRY PROGRAM
SUMMER 1990

BREVARD COMMUNITY COLLEGE
STAFF & PROGRAM DEVELOPMENT

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BACKGROUND

Emerging technology and the general advancement of knowledge of the past decade have made educational delivery and faculty professional development a greater challenge than in the past. The need to update faculty on the technologies has never been more critical. Factors such as the use of computers in drafting and electronics are continually changing the list of skills required of community college graduates in these and other fields. Further, the Universities cannot provide the experiences necessary for faculty to stay current with the rapidly changing "hi-tech" industries.

As an alternative, the Brevard Community College Office of Staff and Program Development (S&PD) piloted a project in Summer 1982 aimed at updating two computer science faculty in the use of microcomputers. Building on this successful experience, the College implemented in Summer 1983 an expanded Return to Industry Program for four faculty in the critical disciplines of drafting, electronics and computer science. This program was state funded through a Program in Excellence Grant and continued under that funding through Summer 1984. In Summer 1985, S&PD funded eight faculty teaching in the Math, Science, and Occupational curriculum areas. In 1986, the program was expanded to include faculty in all curriculum areas. Since 1986, the program has continued to expand, using S&PD funds, occasionally supplemented by state funds.

As summarized in **Appendix A**, over the years, the Faculty Return to Industry Program has attracted approximately 50 faculty participants in disciplines ranging from mathematics, physics, and psychology, to computer information systems, horticulture, and nursing. Industry participants have included Martin Marietta, Harris Corporation, McDonnell-Douglas, Rockwell International, Brevard Correctional Institute, Holmes Regional Medical Center, Bent Oak Golf Club, Brevard County Government, and Cape Canaveral Hospital.

The program has enabled faculty to learn new skills, techniques, and equipment advances as well as essential entry level skill requirements for students. For the eight years since its inception, the program has been mutually beneficial to the College and to industry and has been a productive program for all involved.

The following report reviews the Faculty Return to Industry Program—Summer 1990, which was funded in part by the Education Enhancement Trust Fund through the State of Florida Vocational Inservice Business Exchange Program.

Rosemary G. Layne
Dean of Special Programs
October 1990

METHOD

Program Objectives

The general objective of the Faculty Return to Industry Program is to give current industry work experience to Brevard Community College faculty. The Summer 1990 program provided faculty stipends for ten (5-6 week) positions in area industry during the period from May 14 to August 20, 1990.

Faculty members participating in the program had the opportunity to:

1. Identify new skills and/or techniques required of graduates working in their discipline
2. Identify and become familiar with the latest equipment and applications of theory from their discipline
3. Identify/clarify the essential entry level skills of persons working in the discipline

As a result of these experiences, the faculty should be able to:

1. Make recommendations for upgrading present courses
2. Make recommendations for new course content as necessary in their discipline
3. Make direct application of up-to-date industry techniques in their teaching
4. Better evaluate the type of equipment required to upgrade their program

Faculty Participation

The 1990 program was targeted toward full-time faculty in all discipline areas.

In February 1990 all full-time instructional faculty were sent an announcement flier **(Appendix B)** soliciting involvement in the S&PD Return to Industry Program. Faculty interest was further generated through an article in the S&PD Newsletter, ***Horizons***, which included testimonials from faculty with successful Faculty Return to Industry experiences in previous years.

The program provided faculty the opportunity for many tangible incentives. The most obvious was the incentive to become updated in new technologies being used in industry within their discipline. In addition, faculty in the Return to Industry Program were provided a stipend of $85/per day and were offered the opportunity to apply this learning experience to the maintenance of their continuing contracts at the College. Faculty who received funding through the Vocational Inservice Business Exchange received their full daily rate of pay.

The ten faculty participants represented eight disciplines: Automotive Technology, Biology, Computer Information Systems, Electronics, Hospitality Management, Mathematics, Physical Science, and Turfgrass Operations.

Industry Contact

Because program implementation depended upon locating a suitable worksite for each faculty applicant, each was encouraged to identify an industry/company and contact person who would be appropriate to his/her specific objectives. With one exception, all faculty were able to identify industry work

sites through initial telephone contacts and, in several cases, through site visits. The Dean of Special Programs then telephoned each industry contact to provide an overview of the program as well as background information on the specific faculty member. Follow-up letters were sent to appropriate industry executives to request industry approval for the assignment of each faculty member. **(Appendix C).**

Once industry approval was given, an attempt was made to maintain contact with the industry representative throughout the program to advise of program procedures and to facilitate the ongoing relationship between faculty and industry. The Dean of Special Programs also made site visits to two of the industries for the twofold purpose of discussing progress of the faculty member and to encourage participation by the industry in subsequent years. These site visits were made midway through the work assignment period. In addition, in order to communicate the success the BCC Faculty Return to Industry program has had over the past eight years, we began production of a videotape to spotlight our faculty in industry during Summer 1990. The BCC TV production crew interviewed/videotaped faculty and their supervisors at industries whose security regulations permitted this.

Faculty Participant Follow-up Report

Faculty Participant Follow-up Reports were completed by participating faculty. These open-ended forms were designed to obtain faculty input on primary duties performed during the program, direct applications to their teaching field, value for their professional development, and suggestions for improvement of the program.

Industry Participant Feedback Forms

Each industry contact was mailed an Industry Participant Feedback Form during the final week of the faculty work assignment period. This form was designed to verify workdays, to obtain input on the success of the program, and to request information concerning industry involvement in the program in subsequent years.

RESULTS

Faculty Participant Follow-up Report Results

Follow-up reports completed by BCC faculty indicated that the experience related directly to the teaching field and should make a direct contribution to classroom instruction as well as to the individual's professional development. In general, faculty indicated that the industry experience introduced "techniques developed in recent years which normally cannot be studied in the traditional classroom setting (even graduate school)." They indicated that the experience "helped immeasurably in the development of new course offerings," has provided "an invaluable source for job opportunities for BCC students", and has enabled them to "grow professionally in the free exchange of new ideas."

Faculty responses are provided (unedited) in **Appendix D.**

Industry Participant Feedback Form Results

The industry evaluations were complementary and reflected mutual College/Industry benefits from the program. As cited in **Appendix E**, several faculty participants completed or assisted in valuable short-term projects for industry, such as the county-wide inventory of sports facilities compiled by John Heimann for the Brevard County Tourist Development Council, the local forecast study on Summertime tornadoes accomplished by Eric Harms at the National Weather Service, and the research and development project completed by Chrys Panayiotou at Harris Corporation, Government Aerospace Division.

In addition, industry evaluations noted benefits such as "provide faculty a feel for what is/will be required of new grads as they enter the workplace," "establishment of a close and active relationship with BCC," and "communicate specific training needs and requirements to BCC."

It was also interesting to note that three of the industries indicated the presence of BCC's faculty assisted with the professional development of their own industry personnel. For example, the feedback from the National Weather Service indicated that ongoing discussions with Eric Harms "broadened the perspectives of our meteorologists and challenged them professionally while making them more aware of the impact of their acts and decisions." Feedback from Dictaphone Corporation cited that Shai Newmann's "design of experiment methodology will be utilized in-house to train other engineering groups on modern statistical methods." Finally, the Merritt Island Wildlife Refuge feedback indicated that exchange of ideas between Bill Wenz and the staff on the environment of Central Florida "provided a new prospectus of the meaning of our work to a local concerned citizen."

Ten of the ten industries indicated their willingness to participate in the BCC Faculty Return to Industry Program next year. Discipline areas indicated as being the most useful to these industries included autocad drafting, public relations, engineering, general computing, biological sciences, and quality control.

RECOMMENDATIONS FOR CONTINUED IMPROVEMENT

1. The work experience should be a minimum of six weeks. Funding permitted, eight weeks would be a more realistic target length to achieve mutual College/Industry objectives.

2. Continue to stress early faculty planning and initiative in searching for an industry partner, in order to define a suitable, precise project. The announcement of the available opportunity should be made in January to provide faculty with additional planning time.

3. Expand—Expand—Expand. As one faculty member indicated in the 1987 program, "the value of this program cannot be overstated. Instructors in all disciplines should look seriously at applying for participation in the Return to Industry (Program) in future years."

4. Using the promotional videotape produced during Summer 1990, visit Division meetings during Spring 1991 to generate enthusiasm for participation by faculty in all disciplines.

BREVARD COMMUNITY COLLEGE

FACULTY RETURN TO INDUSTRY
(1982-1990)

YEAR	DISCIPLINE	INDUSTRY	FUNDING SOURCE
1982	Computer Science		S&PD
	Computer Science		S&PD
1983	Drafting		Prog in Excellence Grant
	Electronics		Prog in Excellence Grant
	Computer Science		Prog in Excellence Grant
	?		Prog in Excellence Grant
1984	Biochemistry		Prog in Excellence Grant
	Biology		Prog in Excellence Grant
	Physics		Prog in Excellence Grant
	Computer Science		Prog in Excellence Grant
1985	Office Technology	Martin Marietta Co.	S&PD
	Math/Statistics	Harris Semiconductor	S&PD
	Physics	McDonnell Douglas Tech	S&PD
	Biology	Bionetics Corp.	S&PD
	Biomedical Equip. Tech	Phoenix Med Electronics	S&PD
	Mathematics	DBA Systems, Inc.	S&PD
	Industrial Electricity	Norsk-Hydro Aluminum	S&PD
	Technical Writing	Lockheed Space Oper. Co.	S&PD
1986	Nursing	Jess Parrish Hospital	S&PD
	Mathematics	Compucom Inc.	S&PD/ECC*
	Ornamental Horticulture	Rockledge Garden Nursery	S&PD
	Mathematics/Physics	RCA Corporation Metric Sys.	S&PD/ECC
	Psychology	Brevard Correctional Inst.	S&PD
	Medical Lab Tech	Holmes Regional Medical Cntr.	S&PD
	Microbiology	Terry Corporation	S&PD/ECC
	Machine Tools	Titusville Tool & Engineering	S&PD
	Respiratory Care	Cape Canaveral Hospital	S&PD
	Political Science	Brevard County Government	S&PD
1987	Mathematics	Dictaphone Corporation	S&PD
	Computer Information	McDonnell Douglas	S&PD
1988	Air Cond./Refrig.	Tropic Air	Voc Ed Grant
	Automotive Mechanic	Jon-Glenn Chevrolet	Voc Ed Grant
	Hospitality Mgmt.	C. B. Holiday Inn	Voc Ed Grant
	Computer Info. Systems	Harris Corporation	Voc Ed Grant
	Computer Info. Systems	Rockwell International	Voc Ed Grant
	Industrial Electronics	General Electric	S&PD
	Horticulture	Bent Oak Golf Club	S&PD
	Math/Statistics	McDonnell Douglas Astro	S&PD
1989	Precision Machining	Rockwell International	S&PD
	Hospitality Management	Howard Johnson Plaza	S&PD
	Biology	U.S. Fish & Wildlife Service	S&PD
1990	Computer Info Systems	Rockwell International, KSC	Voc Ed Grant
	Computer Info Systems	Briel, Rhame, Poynter, Houser Architects-Engineers, Inc.	Voc Ed Grant
	Automotive Technology	Ron Morris Buick-Honda-GMC	Voc Ed Grant
	Electronics	Harris Corporation, GASD	Voc Ed Grant
	Electronics	Rockwell International, KSC	Voc Ed Grant
	Physical Science	National Weather Service	S&PD
	Hospitality Management	Brevard County Tourist Development Council	S&PD
	Turfgrass Operations	Indian River Colony Club	S&PD
	Mathematics	Dictaphone Corporation	S&PD
	Biology	U.S. Fish & Wildlife Service	S&PD

*Partial funding from East Central Florida Consortium for Higher Education and Industry

BREVARD COMMUNITY COLLEGE

STAFF & PROGRAM DEVELOPMENT

FACULTY RETURN TO INDUSTRY PROGRAM — SUMMER 1990

TIME PERIOD: Six weeks (Four to five week assignments may also be considered.)

STIPEND: Each position carries a Staff & Program Development Stipend of $2,250 for the six week assignment. No other expenses have been budgeted.

ELIGIBILITY: This expanded program includes eligibility for **full-time instructional staff in all disciplines** (including vocational) provided that you can define how high technology has changed applications in your discipline in the target work setting.

OBJECTIVES: Faculty members participating in this program will have the opportunity to:

1. Identify new skills/techniques required of graduates working in your discipline.
2. Identify and become familiar with the latest equipment and applications of theory from your discipline.
3. Identify/clarify essential entry level skills of persons working in the discipline.

EVALUATION: Participants will file a written report with the S&PD Office which will evaluate the degree to which objectives were met. This report will also include a critique of the project and recommendations for improvement.

PROCEDURES: This is a flexible program which can be tailored to meet your individual interests. Interested faculty should submit a memo (through your Division Chair/Dean and Provost) to Dr. Rosemary Layne by March 16. This memo should include the following elements:

1. The dates you would prefer to participate. (Must be during non-contract dates).
2. The type of assignment preferred. For example, working in an environment where laser technology is used in manufacturing.
3. The government agency/company you would like to work with in establishing a position. Faculty should anticipate taking initiative in locating an industry partner.
4. Specific tasks to be completed or competencies gained during this experience.
5. Any specific benefits in the improvement of teaching and learning.
6. A current resume (attached).

APPLICATION DEADLINE: March 16, 1990

If you have any questions concerning this program or would like suggestions on possible work sites to consider, feel free to contact Dr. Rosemary Layne at Cocoa, Ext. 3660, prior to submitting your initial request.

BREVARD COMMUNITY COLLEGE

March 29, 1990

Mr. Ralph McMullen, Executive Director
Tourist Development Council
2235 N. Courtenay Parkway
Merritt Island, FL 32953

Dear Mr. McMullen,

Thank you for your enthusiasm and support of the Brevard Community College Faculty Return to Industry Program - Summer 1990.

Per my telephone conversation with you on March 27, this work experience opportunity is a vital part of our plans to strengthen our instructional program at the College. As I explained, details of the program are as follows:

- Because Brevard Community College will pay a direct stipend to the faculty member, the service of the faculty member is offered without cost to the Tourist Development Council.
- The College will be responsible for all fringe benefits, including accident insurance and workman's compensation. Should you have any questions concerning benefits/insurance, you may contact Mr. Robert Lawton, Vice President for Human Resources.
- Dates of the program are June 25 - August 10 (30 working days).
- You can expect the faculty member to work the "normal" workweek and hours.
- The only required paperwork on your part is a one-page follow-up, verifying actual days worked and indicating your estimation of the success of the program.

The primary objectives of this work experience include:

1. To make direct application of industry techniques in teaching.
2. To better evaluate the type of equipment needed for improving laboratory exercises.
3. To learn new skills in the specific discipline.

District Administration ☐ Open Campus ☐ 1519 Clearlake Road Cocoa, Florida 32922 ☐ (407) 632-1111 ☐ FAX (407) 639-0078
Titusville Campus 1311 North US 1 Titusville, Florida 32796 ☐ (407) 269-5664
Melbourne Campus 3865 North Wickham Road Melburne, Florida 32935 ☐ (407) 254-0305
Patrick Center ☐ 1140 School Avenue, Building 998 Patrick Air Force Base, Florida 32925 ☐ (407) 784-1911
Florida Advanced Technology Center ☐ 250 Grassland Road, S.E. ☐ Palm Bay, Florida 32909 ☐ (407) 951-1060

Mr. John Heinmann is one of ten faculty members who has been selected for the BCC Return to Industry Program. He is interested in an assignment at the Tourist Development Council.

If this assignment is possible, please notify me in writing at your earliest convenience. In the meantime, should you have any questions, please contact me at 632-1111, extension 3660.

Sincerely,

RG Layne

Rosemary G. Layne, Ed.D.
Dean of Special Programs

RGL/kk

cc: Dr. David Oscarson
Mr. John Heinmann

BREVARD COMMUNITY COLLEGE
FACULTY RETURN TO INDUSTRY PROGRAM—1990

Faculty Participant Follow-up Report

SUMMARY

1) FACULTY NAME/TEACHING FIELD/INDUSTRY/ASSIGNMENT DATES:

— Dick Bambery, Computer Information Systems
Briel, Rhame, Poynter, Houser Architects & Engineers
Melbourne
May 14 - June 20, 1990 (6 weeks)

— Glenn Forester, Automotive Technology
Ron-Norris, Inc., Titusville
June 26 - August 7, 1990 (6 weeks)

— Eric Harms, Physical Science
National Weather Service, Melbourne
June 26 - August 6, 1990 (6 weeks)

— John Heimann, Hospitality Management
Brevard County Tourist Development Council, Merritt Island
June 25 - August 10, 1990 (6 weeks)

— Jennifer Meyer, Turfgrass Operations
Indian River Colony Club Golf Course, Melbourne
June 25 - August 3, 1990 (5 1/2 weeks)

— Shai Neumann, Mathematics
Dictaphone Corporation, Melbourne
June 25 - July 31, 1990 (5 weeks)

— Chrys Panayiotou, Electronics
Harris Corporation, Government Aerospace Division, Palm Bay
June 26 - August 7, 1990 (6 weeks)

— Edna Stewart, Computer Information Systems
Rockwell International, Kennedy Space Center
June 25 - August 20 (7 1/2 weeks)

— William Wenz, Biology
Merritt Island Wildlife Refuge, Merritt Island
May 14 - June 22, 1990 (6 weeks)

— Randall Youmans, Electronics
Rockwell International, Kennedy Space Center
May 14 - August 7, 1990 (6 weeks)

2) **PRIMARY DUTIES PERFORMED:**

— I was assigned tasks typically expected of novice drafters. I worked on a 'real' project of high priority with a team of professionals. My contributions were more supportive than creative but nevertheless meaningful. Participating in the company's AutoCad training program, I acquired considerable skill from lectures, demonstrations, and practice. I observed effective teaching methods, studied relevant textual materials and AV techniques.

— Preventative maintenance and problem diagnosis on late model Buick, Honda, and GMC vehicles. The major emphasis was in areas of computer controlled fuel and emission systems, anti-lock brake systems, and electrical or electronic devices. During periods of time where these type of services were not needed, I worked alongside the line technicians and assisted in the assorted tasks that were routinely assigned on a day-to-day basis.

— a) Assist duty weather forecaster in developing each day's weather forecast, including review of computer graphics and guidance, review of radar, satellite, and lightning data, and review of NASA's morning weather discussion.
b) Hand analyze 8:00 a.m. weather maps in detail for the Southeast U.S.
c) Provide insights on Florida weather for meteorologists new to the area.
d) Initiate and complete research on the atmospheric conditions associated with numerous severe thunderstorms over Florida during the month of June 1981.
e) Provide research data for verification of chance of rain forecasts.

— Worked on a facilities survey to locate all of Brevard County's sport complexes including private, public, schools, and Parks and Recreation. Ten pages of data was gathered on each facility, i.e. equipment, concessions, locker rooms, security, etc. Additionally, I had the pleasure of working for two weeks in the planning and preparation of the CARTO/ESSTO National Convention held in Cocoa Beach. CARTO = National Council of Area and Regional Travel Organizations. ESSTO = Educational Seminars For State Travel Organizations.

— I experienced all phases of daily golf course maintenance, including mowing, sand trap detailing, insecticide and herbicide applications, installing drainage systems, aerifying, topdressing, vericutting and fertilizing. I also studied the management of the golf course, such as scheduling, personnel decisions, required licenses and the working relationship between management and the Golf Course Superintendent.

— Conduct an experiment on Wave Soldering Machines to find and evaluate optimal settings of controllable parameters.

— a) Literature research
b) Developed Universal Demodulator Algorithm.
c) Developed mathematical models for all parts of algorithm.
d) Simulated all models using an advanced mathematics software package.
e) Compared all different alternatives of implementation of the algorithm and suggested the optimum interim of speed.
f) Exposed to Or-Cad, a schematic Capture Design software package.
g) Exposed to Tango, a Printed Wiring Board Design Software Package.
h) Established relationships with the technicians supervisor, several section managers and planned on courses to be offered by BCC/FATC.

— a) Participated in the automation of the Information System and Network Integration "Help Desk" functions; attended both weekly and daily staff meetings. The daily staff meetings were held to discuss and resolve any user problems that had not been resolved.

b) Attended training sessions on the MacIntosh and learned to use the Microsoft Word and Excel software; also, attended a session on the Data Beam system.
c) Assisted in the one-on-one user problem resolution at the ISNI Help Desk.
d) Designed and implemented a data base to track available documents and a sign-out system for users. Also, assisted in the collection of baseline data used in several management tracking reports.

— Field work included identification of fish and invertebrate samples, fishery populations and movement patterns, and descriptive profiles of specific field locations.

— Monitored test and checkout procedures for Shuttle hardware and ground support equipment. Helped in fabricating breakout boxes for the automatic test equipment.

3) RELATIONSHIP TO TEACHING FIELD:

— I will be able to immediately utilize the acquired skills in the classroom and the Computer-Aided Drafting Lab. Assignments to and expectations of students can be made more directly analogous to real work situations. Students should be better equipped to transition into the workplace.

— This program afforded me the opportunity to directly apply diagnostic techniques and Service procedures that parallel the skills acquired during my sessions with General Motors training centers. These are the same skill needs that we are upgrading the automotive curriculum at BCC to meet. The knowledge and experience gained during this exposure to industry shall help immeasurably in the development of new course offerings and result in our students being better prepared for entry in the automotive service industry.

— a) Application of weather principles to day-to-day operations; usefulness of definitions and theories that cannot be gained from a textbook.
b) Preparation for installing of new Doppler weather radar and its ensuing media blitz; how to read its data.
c) Better explanations of latest developments, such as Doppler radar and lightning detectors.
d) Introduction to career field of hydrology: river flooding, rainfall patterns, drainage systems.
e) Steps in severe weather warnings, which *are* initiated by the public.
f) Correcting public perception of Weather Service warnings and forecasts.
g) Employment opportunities in government agencies.
h) Source of guest speakers.

— A greater knowledge of what's happening in the field of tourism, not only in Brevard County, but also on the state and national level. The contacts made through the CARTO/ESSTO meeting have provided this instructor with invaluable sources for job opportunities for BCC Hospitality/Tourism students.

— My experience at Indian River Colony Club will have an impact on the students in the Turfgrass Operations class in several ways. They will have:

a) an instructor more confident of her own capabilities.
b) a curriculum more in touch with the intense cultural requirements of golf course management.
c) a perspective on maintenance from the golfer's point of view.
d) a repertoire of guest speakers/field trips from new industry contacts.
e) a lesson on management and personnel relations.
f) a Program dedicated to the newest information and most current technology in turf management.

— The experiment and analysis of results are related to theory of statistics taught in our "STA 2023 Intro to Statistics" course. Specifically, analysis of variance (ANOVA) was used to determine significance of factors.

a) I am familiar with the areas that technicians need more training to carry their specific duties at Harris/GASD.
b) Use real world examples in class discussions.
c) Train students on the new computer software that technicians are using every day.
d) Adapt my teaching methods to the new requirements of industry.

— The information I have learned will apply directly to my CIS classes and be especially useful when I teach the new telecommunications course. My lectures will be more meaningful by my being able to tie the theory to "real world" applications. Also, this will enhance the students' understanding of the subject matter.

An added benefit is the exposure to state-of-the-art equipment and technology. Not only can I discuss this with the students, but I will be able to do some long-range planning to upgrade the equipment in the computer lab and make changes to the curriculum to keep it current.

Learning to use the MacIntosh PC will enable me to make use of the new MacIntoshes and Microsoft software received in the computer lab this summer.

— I learned new techniques in biological field work regarding our local marine fisheries. These skills are applicable to both Zoology and General Biology.

— The new Digital Oscilloscopes with memory are used extensively and the Electronics Department of BCC does not own one at this time.

The use of secretaries to type procedures, discrepancy reports, and material orders is almost nonexistent. The technician and engineer now use computers to type their own paper.

4) PRIMARY VALUE FOR YOUR PROFESSIONAL DEVELOPMENT:

— My objective this Summer was to acquire skill in the latest version of AutoCad so that I would be better prepared to teach the course in the Fall. I was fortunate to have a mentor, Ron Treharne, who passed on his considerable knowledge in the classroom during training sessions and at his AutoCad workstation. As a result, I can now share these new skills with my own students.

Additionally, I was able to better identify potential employment opportunities (co-op and graduate) and potential sources of students for BCC programs.

— The primary value would be the sense of confidence in my ability to diagnose and service the latest high-tech systems found in today's automobiles. Without confidence in your own expertise in this area, it would definitely hinder attempts at importing this knowledge to students. Additionally, this program allows instructors to build a repertoire of "case histories" that make for interesting stories to enhance points made during classroom lectures.

— a) Field experience in what was my first career goal can now be compared to and used in education.
b) First good chance at extended research.
c) Learned how to interpret weather satellite and radar pictures in detail.
d) Read technical papers and journals on weather forecasting not available outside the National Weather Service.
e) Gained grasp of the Weather Service computer system (AFOS).
f) Learned the meaning and usefulness of special atmospheric measurements toward computer projections or an assessment of the condition of the atmosphere as to coming fair weather or foul.

— Having the rare opportunity of working with Brevard County's Tourist Development Council and meeting with regional and state directors of tourism from across the United States.

— Of greatest value to my professional development was the confidence I gained in my own abilities. I'm no longer intimidated by the large turf equipment! I will be a much more effective instructor having had this valuable hands-on experience to compliment the academic knowledge I have to share with my students.

— The experiment involved techniques developed in recent years, which normally cannot be studied in the traditional setting of a classroom (even in graduate schools). The solution of real life problems of modern industries will add another dimension to my teaching ability.

— Keep up with the new methods, tools and approaches in the design of Electronic Systems.

— The Return to Industry Program is very valuable to me in my professional development. It enables me to stay current in the fast-changing computer technology area. I am able to incorporate this information in my course lectures and better prepare the students for work in industry. Computers affect just about every job in industry today. I believe teachers, teaching in a fast-changing technology area, owe it to their students to take advantage of every opportunity to update their knowledge in their subject area.

— I grew professionally in the free exchange of new ideas regarding fishery management concepts and developed a good working relationship with research agencies at both the State and Federal level.

— Learned to use the new digital oscilloscope and the importance of using personal computers.

5) SUGGESTIONS FOR THE IMPROVEMENT OF THE PROGRAM:

— It was great! I hope to participate again. BCC technical faculty should be required to participate periodically in the program.

— The program itself is very good, the only possible improvement I can envision is to provide funding for additional faculty within specific programs. This would allow faculty members the opportunity to participate in the program on a year-round basis while having their teaching assignments met by this additional faculty member. The fact that many vocational and technical programs are taught by only a few instructors, or many times only one instructor, precludes many from participating due to the lack of qualified personnel for full-time substitution during the academic year.

— Dr. Layne has this program very well organized and efficiently run. Perhaps the program could be advertised even earlier so that more faculty could be thinking about it. In my opinion, it is much more effective to send full-time faculty into the community than to bring the community into part-time teaching. There should be more faculty involvement, preferably those with longer years of college service first. It made me appreciate the job I have.

— Excellent program to keep instructors abreast of current happenings in their field of teaching.

— I thought it was great just the way it was!

— The program should allow continued contacts between the faculty member and the specific industry, so that projects deemed valuable to the college could be supported beyond the limited time of program in the summer.

— Extend the duration from 6 weeks to 6 months. A possible swap of an engineer from a company with a BCC professor should be examined.

— More PR to let industry know about the Faculty Return to Industry Program. Give the faculty more lead-time in the Fall to arrange for the next summer's Return to Industry.

— I am very pleased with the current program, and appreciate the encouragement and support that I received from the administration. I don't see any need to change the way the program is run.

— All work performed at this facility is required to be performed by Government certified personnel. This requirement is necessary because the work performed is on Shuttle Flight hardware and no possible mistake can be permitted. It would be more beneficial if the position was with a company where the work was not so critical and therefore allow the participant hands on experience.

BREVARD COMMUNITY COLLEGE
FACULTY RETURN TO INDUSTRY PROGRAM—1990

Industry Participant Feedback Form

SUMMARY

1) INDUSTRY/LOCATION/IMMEDIATE SUPERVISOR/TITLE:

— Briel, Rhame, Poynter, Houser, Architects & Engineers
Melbourne, FL
Ron Treharne, Supervisor

— Ron Norris Buick-Honda-GMC
Titusville, FL
Wayne Rogers, Service Director

— National Weather Service
Melbourne, FL
Paul J. Hebert, Florida Area Manager

— Tourist Development Council
Merritt Island, FL
Ralph McMullen, Executive Director

— Indian River Colony Club
Melbourne, FL
Thomas B. Trammell, Golf Course Superintendent

— Dictaphone Corporation
Melbourne, FL
John Kempinski, Quality Assurance Manager

— Harris Corporation GASD
Government Aerospace Division
Palm Bay, FL
Gary Matthews, Staff Engineer

— Rockwell International - Aerospace
Kennedy Space Center
James K. Au, Manager Information Systems

— Merritt Island Wildlife Refuge
Merritt Island, FL
Dr. J. P. Clugston, Director Anastomosis & Estuarine Fishes

— Rockwell International
NASA Shuttle Logistics Department
Kennedy Space Center
Gil Waugh, Manager

2) PRIMARY DUTIES PERFORMED:

— Dick was assigned tasks typically expected of novice drafters or entry-level employees. Working on a priority project, Dick contributed to the successful, timely completion of the job.

The tasks included the use of AutoCad—editing, notating, dimensioning, replicating, repositioning, scaling, and similar computer-aided drafting techniques. Dick plotted and printed drawings of his and other designers.

Dick concurrently participated in an in-service training program specifically aimed at novice AutoCad users. Dick scored high on tests.

— Worked hands on with other technicians in the day-to-day servicing and repairing of automobiles.

— Eric assisted the duty forecaster in analyzing the weather situation and preparing the local forecasts. He participated in the daily weather briefings and discussions; conducted a continuous watch on meteorological developments throughout the day by monitoring radar, satellite and lightning observation systems, and taking frequent visual observations and communicating his findings to the forecaster. He made occasional broadcasts on NOAA Weather Radio; completed a local forecast study on summertime tornadoes which required a considerable data collection effort and made use of his interpretive skills of meteorological events. Eric also kept a verification log of the forecasts issued and wrote a brief summary of the results.

— Put together a county-wide inventory of sports facilities.

— Jennifer has gone through all phases of Golf Course Operations. Lake bank maintenance, tree grooming and maintenance, flag pole placement and strategy.

Turf Equipment Operating: Tee box mowing, greens mowing, fairway mowing, rough cut mowing, sand trap detailing, tri king and steiner operations.

Chemical Applicating: Mole cricket control using Orthene, Goose grass pest control using MSMA, Sedge control using Basagran, white clover control using Tri-Mec, spraying of greens with Daconil, fungicide preventative.

Projects and Cultivating: Installation of drain system. Repairing of 6" irrigation main line. Assisting in the aeriation of greens, topdressing of greens, drag and cleanup of greens, fertilizing of greens and fairways. Dethatching of tees by use of a Mat O Way.

Irrigation System and operating by computer, trouble shooting and service.

— Performed an experiment using recently formulated Statistical techniques (Taguchi methods) to optimize our wave soldering process. Planned, helped carry out and analyzed the results. Issued final report.

— Chrys worked on a Research and Development Project. He was tasked to develop and analyze algorithms capable of classifying the modulation type of voice and data signals. Chrys utilized Mat lab as the main simulation tool.

Chrys evaluated a number of CAD design packages including ORCAD and TANGO and was briefed on some of Harris' training needs. He met with various managers to discuss the possibility of covering some of these training needs through BCC courses.

— Participated in the implementation and daily operation of the help desk. This help desk was created to support over 1200 users to provide a single point of contact for the reporting and resolution of all

computer/network related problems. Edna also participated in the creation of a set of reports for reporting to management the help desk activity and performance.

— Bill worked and performed as a fish and wildlife field research biologist. Duties included:

a) Identification of field samples (primarily fish and invertebrates).
b) Physical description of field location, i.e., salinity (use of refractometer) temperature, identification of dominate submergent and emergent vegetation, bottom type.
c) Bill obtained competence in use of gill and trammel nets.
d) Understanding relationship of biota's occurrence in its (abotic) environment.

— To observe and understand the quality of workmanship performed on flight hardware and to convey that information to students.

3) PRIMARY VALUE OF THE BCC FACULTY RETURN TO INDUSTRY PROGRAM FROM YOUR INDUSTRY PERSPECTIVE:

— Dick will be able to directly translate his experience here to his students there. He observed an environment not unlike the future workplaces of your graduates and he can better prepare them to get a grip on it.

While here, Dick had the opportunity to work on a state-of-the-art computer work station with the most current version of the AutoCad program (similar to BCC's platforms). His progress through the assignments equipped him with the skills to share with his students.

— A working knowledge of what is new in our business that can be passed on to students which in turn will give us more knowledgeable students when entering our industry.

— First and foremost is the fact that Eric's presence did not interfere with, or detract from, our operations. The ongoing discussions between Eric and the forecasters about meteorology in general and the intense scrutiny of observation systems and interaction with the staff during breaking weather events, while mainly to Eric's benefit, no doubt broadened the perspectives of our meteorologists and challenged them professionally while making them more aware of the impact of their acts and decisions. The completion of local forecast studies on summertime tornadoes and summer thunderstorm rainfall verification were timely and of benefit to our staff, who rarely have time to work on such projects during shift.

— Gave the TDC an additional staff person, familiar with the tourism industry, to work full time on a special project.

— Besides being the busiest time of the year and getting a quality, free employee, the instructor being able to relate to the students better. Getting a chance to perform technical duties in the field. This is a very valuable asset for the teaching of this.

— Optimized process parameter settings—thus reducing scrap and rework.

Design of experiment methodology will be utilized in house to train other engineering groups on modern statistical methods.

Allows Mr. Neumann to update his future courses in statistics.

— The establishment of a close and active relationship with BCC. This relationship gave the opportunity to Harris to communicate specific training needs and requirements to BCC and to also understand the content of the course offerings from BCC. This information interchange can lead to better utilization on resources that can benefit both BCC and Harris training activities.

— Exposure and participation to activities that take place within the company operation. Additionally, this program can provide the faculty a feel for what is/will be required of the new grads as they enter the workplace.

— From a selfish point of view, I obtained a well-schooled field biologist to help in my research efforts—free! In the larger scheme, we (Bill, me and my staff) exchanged ideas, thoughts and concerns on the environment of central coastal Florida. We gained a "new prospectus" of the meaning of our work to a local concerned citizen. We further learned what is important to the citizens of this area.

— a) Observe trouble shooting and test of electronic assemblies performed by test engineering.
b) Observed work being performed by technicians and assemblers. (Manufacture of test equipment and rework of Shuttle Flight hardware.)
c) Participate in manufacturing operations.

4) WOULD YOU BE WILLING TO PARTICIPATE IN THE BCC FACULTY RETURN TO INDUSTRY PROGRAM NEXT YEAR?

10 YES 0 NO

5) IF SO, PLEASE LIST DISCIPLINE AREAS THAT WOULD BE THE MOST USEFUL TO YOUR INDUSTRY.

— AutoCad Drafting

— Mechanical Tech
Body Tech
Service Managing

— The operations of the National Weather Service are highly specialized and the reason Eric worked out so well was due to his strong background in meteorology. We would have to limit participation to those faculty members of similar background otherwise the person would have to undergo considerable training by our staff to benefit from this program—something we do not have the time or staffing to do.

— Public Relations, Community Relations, Research, Marketing

— The industry is constantly changing. Laws are being upgraded and new requirements added. It is very important for the instructors to stay current with the field and environmental changes.

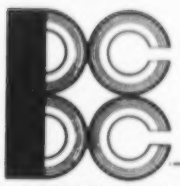
— Quality (Statistics)
Industrial Engineering

— a) Engineering (Electronics, Computer, Mechanical)
b) Mathematics
c) Engineering Management

— General computing, Software development, Networking and Telecommunications.

— Biological Scientists, Environmental Scientists

— Electrical Engineering
Electronic Technician
Quality Control



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